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A GUIDESHEET TO

WATER RIGHT DOCUMENTATION

WATER MEASUREMENT CALCULATIONS

LEGAL LAND DESCRIPTIONS

FOR EXISTING WATER RIGHT CLAIMS

PLEASE RETURN

Senate Bill 76, a law passed by the Forty-sixth Montana Legislature, calls for a court determination of existing water rights. The law requires most persons who claim a Montana water right that originated before July 1, 1973, to claim that water right before January 1, 1982.

This guidesheet is designed to assist you in three potential problem areas in completing your claim to existing water rights: finding information to prove your claim to water use, determining the amount of water you use, and legally describing the location of your land.

This booklet prepared by:

**MONTANA DEPARTMENT OF NATURAL
RESOURCES & CONSERVATION**
Water Rights Bureau

DNRC



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WATER RIGHT DOCUMENTATION

An existing water right may be one of three types:

Filed appropriation rights, records of which are available in offices of the county clerk and recorder.

Decreed rights, which are results of a water right lawsuit. Records of decrees are in offices of the county clerk of court.

Use rights, unrecorded in public record, but still valid if the date of first use can be substantiated through personal research.

This list is designed to give you sources of information that may help you substantiate your water right claim.

AERIAL PHOTOGRAPHS

Aerial photographs often show such details as ditches, dams or other developmental features. The date the photograph was taken was stamped on aerial photos beginning in 1958. Earlier photographs may be dated by obtaining a sworn statement from the photographer or other person with first-hand knowledge. Copies of aerial photos are available from Water Right field offices of the Department of Natural Resources and Conservation or from government agencies such as the Soil Conservation Service (SCS).



DEEDS AND ABSTRACTS

An abstract is a listing of evidence in public records bearing upon the validity of title to land. Often the abstract describes the water right. Reading the abstract may give you clues to such information as date of original use or extent of land holdings. If the water right was recorded, the abstract may list volume and page numbers of the original water right record in the County Clerk and Recorder's office. If a right has been decreed by a court, the abstract may list case number and county of the decree record.

WATER MEASUREMENT RECORDS

Measurement records are historical evidence of your water diversion and use requirements. Private measurement records are good proof of use if the dates of the measurements have been recorded or can be substantiated.



COUNTY RECORDS

Prior to July 1, 1973, one method of appropriating both surface and ground water included filing with the County Clerk and Recorder. These records may provide date of first use, name of original appropriator or place of use. As county boundaries changed over the years, records were sometimes not transferred to the new county seat. Records of the earlier county seat may contain some pertinent information. Water rights decreed by a court are on record at County Clerk of Courts. Copies of original homestead and mining patents are also available in County Clerk and Recorder's offices or by writing the Bureau of Land Management, P.O. Box 30157, Billings, MT 59107.

PHOTOGRAPHS

Personal photographs may show evidence of water development. These photographs, if dated, would be good evidence of prior use. Identify date, location, description of what is shown and sources of the photograph.

WATER RESOURCES SURVEYS

Water Resources Surveys were compiled and published by the State Engineer's Office and its successors for all counties except Beaverhead, Daniels, Fergus, Garfield, Petroleum, Roosevelt and Sheridan. However, unpublished survey data of the preceding counties is on file at the Department of Natural Resources and Conservation, 32 South Ewing, Helena, MT 59601. The surveys contain an inventory of irrigation at the time of survey as well as maps illustrating the irrigation developments. Copies of the published surveys are available for about half the counties at the water rights field office pertinent to the area. Original field material gathered for the survey is on file at the Helena office of the Water Rights Bureau, Department of Natural Resources and Conservation, 32 South Ewing, or at the local field office.

AFFIDAVITS

Used to support the history of your water right, an affidavit is simply a typed or handwritten statement signed and notarized under oath by someone with first-hand knowledge of the date of first use, development, local customs, agreements, or history of the water use you are claiming. Affidavits can be sworn by a ditchrider, employee, former landowner, neighbor, or other party.



OTHER SOURCES MAY INCLUDE:

- Cancelled checks related to the water development construction or repair
- Agreements between neighbors
- Construction records of headgates, ditches etc.
- Diaries, letters or genealogies that might mention the water use
- Receipts for purchased materials used in the water development

WATER MEASUREMENT DETERMINATIONS

Each water right claim form requires you to identify the maximum flow rate and volume of water used in a year. There are several methods for arriving at flow rate and volume figures, any of which are satisfactory. The following suggestions are meant to aid you in common water use determinations. An individual situation may differ somewhat from the descriptions found here.

DOMESTIC USE

Flow

Domestic uses of ground water include uses like cooking, drinking, laundry, sanitation and individual lawn and garden care. Rate of flow for domestic wells is commonly expressed in gallons per minute.

The well driller or owner may have filed a record of the completed well at the county court house, including the measured rate of discharge. If no recorded flow rate is available, discharge in gallons per minute can be measured by filling a bucket and using a stopwatch. Most domestic wells discharge between 5 and 30 gallons of water per minute.



Volume

The yearly volume of water you use for domestic purposes can best be estimated by using the following standard:

| | |
|------------------------|--------------------|
| Family of Five | 1.0 Acre-Foot/Year |
| ¼ Acre Lawn and Garden | .5 Acre-Foot/Year |
| Total Volume Used | 1.5 Acre-Foot/Year |

One acre-foot of water equals approximately 325,900 gallons. You may need to adjust these standards to accommodate your particular situation.

STOCKWATER USE

Flow

Stock water uses include poultry, sheep, goats and hogs, as well as large livestock. The rate of water flow needed to supply sufficient water may be expressed as any of three common units: cubic feet per second (CFS), gallons per minute (GPM), or miner's inches (MI). Conversion from one unit of flow to another may be done by using the following standards:

$$1 \text{ CFS} = 450 \text{ GPM}$$

$$1 \text{ CFS} = 40 \text{ MI}$$

$$1 \text{ CFS} = 646,272 \text{ gallons per day}$$

Flow rate of drilled wells may be determined by obtaining records of the well, such as a well log. If no recorded flow rate is available, the bucket-stopwatch method may be used to measure your well. Most small wells discharge between 5 and 30 gallons per minute, which is usually sufficient for most stock needs.

Discharge of springs may have to be measured or estimated to claim sufficient flow for stock use. A flow rate for livestock drinking direct from the creek, spring or ditch may be difficult to measure, but most rates will range from 10 to 30 gallons per minute. For ponds or reservoirs, flow rate is expressed as the maximum rate recharge water flows into the pond or reservoir.



Volume

Determination of annual water need for stock water use of wells, springs, streams or ditches can be calculated with reasonable accuracy using the following formulas. These formulas represent use by horses or mature beef cattle.

Wells or Springs

$$\text{ACRE-FEET} = .0014 \times () \text{ Months} \times () \text{ Head}$$

Streams and Ditches

$$\text{ACRE-FEET} = .0028 \times () \text{ Months} \times () \text{ Head}$$

Either formula may be used for milk cows, hogs, or sheep with one additional step:

Milk Cows - Multiply by 2

Hogs - Divide by 3

Sheep - Divide by 5

The volume of ponds, lakes or reservoirs (generally less than 50 acre-feet capacity) can be calculated using this formula:

$$\text{ACRE-FEET} = \text{Surface Area (acres)} \times \text{Maximum Depth (feet)} \times 0.4$$

Multiply the formula by the number of times the reservoir is completely used and re-fills in a year of maximum use.

Some average water requirements for use throughout the year are listed below, as actual daily requirements depend on air temperature, type of feed, activity, etc.

15 gallons per day each horse, dry cow, steer

30 gallons per day each milk cow

5 gallons per day each hog

3 gallons per day each sheep

1 gallon per day each turkey

IRRIGATION USE

Flow

Determination of flow rate for irrigation systems should be made at the point of diversion from the water source. Many irrigation wells were recorded at the county court house upon completion, and may give you clues to the yield measured by the driller or original owner. Filed appropriations, also recorded at the county courthouse, may give you some idea as to the amount of flow of the original appropriation. Pump or equipment specifications may list a discharge rate. Assistance with selection and use of measuring equipment can be obtained from private agricultural consulting firms or equipment manufacturing representatives.

Volume

Once flow rate has been established, the yearly volume used can be calculated. One way is to first determine the total number of 24-hour days you use the water at full flow in a year of maximum use.

A yearly volume can now be calculated by using one of the following formulas:

For A Flow Rate Expressed in Miner's Inches (MI):

$$\text{ACRE-FEET} = \frac{\text{MI} \times \text{DAYS} \times 2}{40}$$

For A Flow Rate Expressed in Cubic Feet Per Second (CFS):

$$\text{ACRE-FEET} = \text{CFS} \times \text{DAYS} \times 2$$

For A Flow Rate Expressed in Gallons Per Minute (GPM):

$$\text{ACRE-FEET} = \frac{\text{GPM} \times \text{DAYS} \times 2}{450}$$

Remember to include the water loss of the conveyance facilities to insure necessary water at the place of use.

Information about factors affecting how often water is applied, such as soil intake, crop requirements, and climatic conditions, is available in some publications. Folder 172, "Irrigation - When and How Much" by the Cooperative Extension Service and "Irrigation Guide for Montana" by the Soil Conservation Service are very helpful.

OTHER USES

The multitude of uses that exists prevents an explanation of each use and related methods of flow and volume calculations. However, most determinations could include use of the suggestions given in the previous sections. If you have doubts about your method of determination, contact your nearest Water Rights Bureau field office.



LEGAL LAND DESCRIPTIONS

In order to describe the location of an irrigated field, point of water diversion or place of use, you will need to know how the system of land description works.

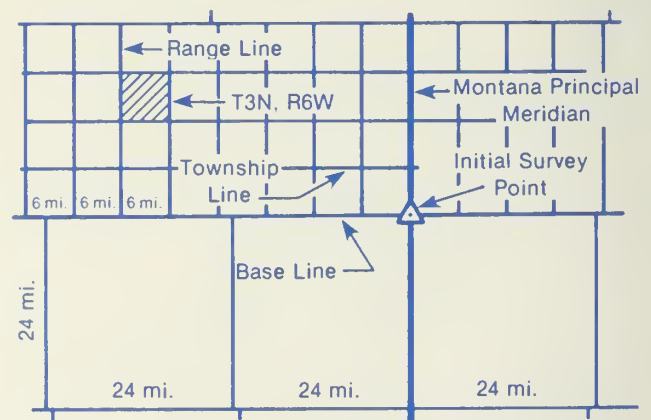
Land is commonly measured by two methods: 1.) a rectangular grid system, or; 2.) a metes and bounds system.

The rectangular grid system is used for division of large areas into townships, sections, half and quarter sections. The rectangular grid system is used on the water right claim forms. The metes and bounds system is used to describe smaller areas, mountainous or irregular-shaped land.

DETERMINING LOCATION BY THE GRID SYSTEM

Starting from an initial survey point near the town of Willow Creek, Montana, the state has been divided into blocks 24 miles long and 24 miles wide.

The 24 mile blocks are further subdivided into townships by range lines running north and south and township lines running east and west at six-mile intervals.

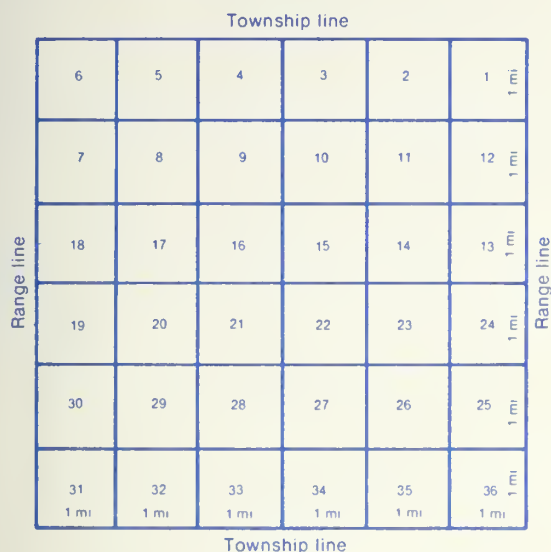


A north-south line called the Montana Principal Meridian (M.P.M.) and an east-west base line extend through the initial survey point.

A township is numbered according to its location from the initial survey point. For example, in the illustration above, the cross-hatched township lies in the sixth range column west and the third township column north of the initial survey point. It is designated Township 3 North, Range 6 West, (T3N, R6W).

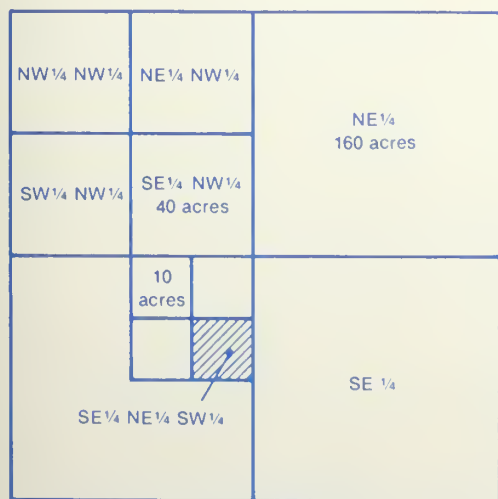
Townships are further subdivided into sections as shown here.

Section numbering begins in the northeast corner of the township. Most of the sections are 1-mile square and contain 640 acres.



In sections which are not the standard 640 acre size due to survey error or natural boundaries such as rivers and lakes, irregular tracts were broken into lots. Actual lot dimensions were then recorded on a map. Lot numbers are also used and shown on a filed map when land is subdivided.

To describe any point in a section, the section is first divided into quarters of 160 acres. A quarter is described as being either the northeast (NE), northwest (NW), southeast (SE), or southwest (SW) quarter of the section. For a more precise location, the quarters can be divided in a like manner to 40-acre quarters. To further describe a location, the 40-acre quarters can be similarly divided to 10-acre quarters.



T3N, R6W, Section 1

The legal description of a parcel of land under the rectangular grid system, when written, always begins with the smallest division and then proceeds to the largest division. For example, the smallest parcel shown in the illustration of Section 1 in Township 3N, Range 6W, would be legally described as:

"The SE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 1, Township 3N, Range 6W".

If you want to describe a location that covers a large area encompassing a stream or lake, the section may be divided in half and described as either N $\frac{1}{2}$, S $\frac{1}{2}$, W $\frac{1}{2}$, or E $\frac{1}{2}$ of Section _____ Township _____ N/S, Range _____ E/W. A larger location may simply be described by the section number.

Most quadrangle maps of the U.S. Geological Survey have townships, ranges, and sections identified. You will need to determine the desired location within the section. A suitable map may also be obtained from the U.S. Forest Service, Montana Highway Department, or Bureau of Land Management.



THE METES AND BOUNDS DESCRIPTION

The metes and bounds method describes a tract of land by giving the direction and length of its sides. The starting point is fixed by stating its direction and distance from a section or quarter-section corner.

An example that might be found in a deed is:

"Beginning at a concrete monument located 1253.3 feet south and 49.6 feet west from the NE corner, Section 10, T8N, R12E, Montana Principal Meridian, at the center lines of Washington and Garfield Roads in the City of Woodland, County of Lewis and Clark, State of Montana, thence:

North 80° 44' west along the southerly line of Elm Street for a distance of 939.0 feet to an iron pin;

South 10° 04' west along the easterly line of said road for a distance of 833.7 feet to an iron pin. . . ." and so forth until the tract is described on all sides. This is not the type of description required on the water right statement of claim forms but it may give you a general idea of where to locate your property on a U.S. Geological Survey quadrangle or aerial photo.



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